ISD News and Views

Table of Contents

Commentary

Farewell, Curt!

Congratulations to Curt Secker, who recently accepted a new position with the Telecom-munications/Network Bureau in ISD. We wish to thank Curt for his diligence in making News and Views the success that it is. Good luck, Curt!

Effective January 1, 1993, responsibility for News and Views will be assumed by Dan Mossman (444-1219) and Brett Boutin (444-0515). Please direct all questions or comments to Dan or Brett.

ISD Project Management Software Selection

ISD recently performed an evaluation of project management software. The scope of this evalu-ation was limited to the identification of project management tools that could assist project lead-ers in estimating, planning, scheduling, and tracking projects. As a result of this evaluation, ISD selected a package for internal use. At this time there are no plans to recommend nor support the software for general statewide use.

Several project management software packages were evaluated and PROJECT WORKBENCH from Applied Business Technology Company (ABT) was selected. The PROJECT WORK-BENCH software system is a PC based product integrating Gantt charts, dependency networks, and resource spreadsheets. Both PC and main-frame based tools were evaluated. The PC based tools generally had more flexible front ends for data entry, on-the-fly project modelling and easy access to charts and reports that help to describe interrelationships on projects. The

mainframe based tools generally had more capabilities for recording weekly hours spent on projects and historical tracking of time and costs.

The cost of PROJECT WORKBENCH is dependent upon the required number of concurrent users. ABT has both stand alone and LAN versions of PROJECT WORKBENCH. ABT has both WINDOWS based and DOS based versions of the software.

If you are interested in the capabilities of PROJECT WORKBENCH, please call Randy Holm, ISD/End User Computing, at 444-2824. Central Stores, in the Department of Administration's Property and Supply Bureau, can obtain PROJECT WORKBENCH or an agency can order the software direct from ABT.

Mainframe

Just for CICS!
A Brief History

IBM's Customer Information Control System, or CICS, celebrates its 25th birthday in 1993. CICS has been utilized by the State for online data processing since late 1975. Since those early days of CICS/VS 1.1, many changes and new releases have come about. CICS/VS went through seven modification levels, with 1.7 allowing application programs to begin taking advantage of the MVS/XA operating system via COBOL II or PL/1 5.1.

IBM released CICS/MVS, Version 2, in 1987. The major benefit of CICS/MVS was the Extended Recovery Facility, or XRF. XRF allows a shadow CICS/MVS system executing either on the same or even a remote CPU to automatically take over processing for the primary CICS/MVS system in the event of a system failure. CICS/MVS has gone through three distinct modification levels to the most recent version installed at the State, CICS/MVS 2.1.2.

To take advantage of the ESA operating system, IBM released CICS/ESA, Version 3, in 1989 and has since made two modification levels to that version. CICS/ESA entails a complete redesign of CICS, with the result being a much more stable system and further exploitation of extended addressing. The price to the application developer for this stability is the elimination of the macro level API and extremely limited access to CICS internal control blocks. Support for the C/370 compiler has been added.

While all of this activity was going on with the mainframe versions of CICS, IBM was looking toward PC's, and released CICS OS/2 in 1989. This distinct product has been through several modifications as well, and also includes a limited function version that can run under DOS. These PC versions of CICS can run as stand alone systems, or they may communicate with remote CICS systems on other PC's connected via a LAN or with CICS on the mainframe.

As you can see, CICS has been a very active product over the last 25 years and should continue to play an integral role as part of the State's online data processing environment.

-- Don Grinsell, Technical Services Section

CICS Programming Aids and Utilities

There are several programming tools and utilities available for CICS application programmers. The following list is an attempt to categorize them and provide a brief description. More detailed information is available by contacting Glen Stroop in the Application Support Bureau or Don Grinsell in the Technical Services Section.

Intertest - Real time application debugging. Intertest also provides the ability to view working storage and file records online.

Eyewitness - "After the fact" abend analysis. Eyewitness formats CICS transaction dumps and allows online access to them. It also provides a brief description of the abend code.

BMS/GT - Design CICS application screens "online". BMS/GT can save many hours of coding BMS mapping instructions.

Assist/GT - Create screen or field level help windows, tutorials, online manuals, and menus for any application accessed via CICS.

TMON for CICS - Real time performance monitoring and analysis. TMON also has an extremely versatile report writer for providing historical analysis or virtually any other information on application performance.

CICS/CEMT - Open or close CICS files from a batch job. This product eliminates the need to bring CICS down to allow batch access to datasets.

CICS/Message - Send messages to specific terminals, users, or predefined groups connected to CICS.

CICS File Transfer Program - Transfer data to or from PC's running terminal emulation software.

ACF2 - Provide application security via ACF2 resource rules maintained by your agency security officer. ACF2 can protect initial access to your application as well as protecting specific screens or file records.

CICSUID - ISD-developed utility to return basic ACF2 information about the current user.

CICS-Juggler - Simulate multiple CICS terminals via a user defined "hot key". This product eliminates the need for multiple sign-ons and logonids.

IDMS UCF - Access IDMS via CICS. This interface allows a CICS application program to access an IDMS database or a CICS terminal user can access IDMS applications directly. Use of this interface makes it possible to use Assist/GT to paint help windows for existing IDMS applications.

Within the next year, look for a VSAM forward recovery product to improve data integrity for applications performing online updates.

-- Don Grinsell, Technical Services Section

SDSF (System Display and Search Facility)

SDSF (System Display and Search Facility) Release 1.3.2 of SDSF (System Display and Search Facility) was installed along with the new MVS/ESA operating system.

If you are having problems getting your output to display on SDSF, you may be having a problem with the way your PREFIX and masking characters are set.

One of the changes that was made with this new release has to do with the PREFIX command.

When you issued the PREFIX ? in the old SDSF (MVS/XA), SDSF would display the PREFIX id (that was currently set), the masking character, and the single character placeholder concurrently. EXAMPLE: CX0017* *%

In the new SDSF, when you issue PREFIX ?, SDSF displays the prefix id that is set ONLY. It does not show you your masking and single character placeholder characters. This was probably changed to eliminate the chance of unknowingly changing your masking characters.

In order to display your masking and placeholder characters, issue the following SDSF command:
    SET SCHARS ?

By default the above command should come back with
    SET SCHARS * %

This is the default and is the recommended setting.

If these masking characters are changed by accident, you will experience difficulty displaying your output on SDSF. You will need to issue the following to reset them back to the default:

    SET SCHARS * %

Then issue the following command for verification:

    SET SCHARS ?

You can get more information on this topic by using PF1 HELP in SDSF. For extended help, reference manual SDSF GUIDE and REFERENCE (SC23-0408-6).

It's Coming!!!!

ISD/Operations is working on changing the default printer from the impact printer to the laser printer. This idea was presented to the Data Processing Managers' Group in December, and met with their approval.

Laser printing is faster, more economical and versatile, and of better quality than impact printing. If you wish, you can highlight certain areas by printing in different fonts (large, small, bold, etc.) on selected lines. Laser print can shade and draw lines and boxes. It also has the capability to add logos, the State seal, or signatures through the use of an overlay. None of these features cost you any more. They are just added features that can be a benefit to you, the customer.

ISD will keep you informed when this will take place. The impact printer will still be available if necessary. We will give you details later.

Microcomputer

Microcomputer Term Contract Updates

Addenda are forthcoming on all three microcomputer term contracts to reflect new prices and products. To date, most proposed new products have been approved, contingent on vendor certification of compatibility. Agencies may buy this equipment, but should be aware that ISD has not rigorously tested the machines. We will work with you if there are compatibility problems that need to be resolved with the vendor.

If you have any questions about the latest prices or products, please call the vendor or Brett Boutin (444-0515) to insure you are aware of the product and pricing changes.

Proposed and final term contract price lists will be distributed, on request, through Zip-Mail. If you would like to be on the distribution list, please call Brett (444-0515).

Microcomputer Maintenance

IBM is in the process of designing the form they suggest be used to place equipment on the term contract. When it is finalized, it will be available for electronic distribution. In the meantime, if you are interested in putting personal equipment on term contract, call Brett for assistance.

ISD Staffing

As you perhaps noted in the commentary, Curt Secker has completed a transition to the Telecommunications/Network Services Bureau and new staff has been hired in the Computing Policy and Development Unit. Brett Boutin (444-0515) will be available to help you on any data processing equipment purchases, term contracts, and other computing planning projects. Dan Mossman (444-1219) will be assuming responsibility for Imaging project activities and a variety of computing planning and acquisition projects. Feel free to call either one for assistance.

Electronic Mail Implementation Update

The number of State electronic mail users is increasing by leaps and bounds! ZIP!Mail is rapidly being implemented on numerous State agency LANs, and is proving to be especially valuable for agencies with remote offices.

The following State agencies currently use ZIP!Mail:

Administration
Family Services
Fish, Wildlife & Parks
Governor's Office
Labor & Industry
Legislative Auditor
Legislative Council
Legislative Fiscal Analyst

Livestock
Office of Budget and Program Planning
Revenue

The Department of Labor will have all remote Job Service offices phased in by February, bringing Labor's total remote ZIP!Mail locations to 38, serving over 300 users. The Legislature will be adding staff for the House and Senate to ZIP!mail this legislative session and the Department of Justice will be adding their data processing and law enforcement divisions soon.

There are currently 718 Zip!Mail users; however the enterprise e-mail system is actually much larger than that. All university units can exchange e-mail with agencies which are using Zip!Mail or compatible minicomputer systems. The Department of Natural Resources and the Department of Transportation use DEC systems which also participate in e-mail. Montana Higher Education Student Assistance Corporation (MHESAC) also recently joined in with plans to exchange messages and files with the university units. E-mail support is also provided to over 700 SRS TEAMS and SEARCHES users, in the various counties across Montana. These users are supported with a electronic mail product called EMC/TAO (on the mainframe) which is compatible with the State's enterprise system.

Agencies wanting more information or a demonstration of electronic mail should contact the ISD End User Computing section at 444-2921.

When DOS Programs Won't Start in Windows...

If you try to start a DOS based program in Windows and get that nasty "INSUFFICIENT MEMORY" message, you have just a couple of options to get that DOS program running under Windows.

First, check the contents of the clipboard. If you have recently been doing cutting and pasting through the clipboard, it can take up a large amount of memory. Clear the clipboard by "launching" the Clipboard Viewer, click on Edit, click on Delete. Close the Clipboard Viewer and try to launch your DOS application.

Many times, clearing the Clipboard is all you need to do to gain back sufficient memory, BUT if clearing the clipboard does not provide enough memory, you have only one other alternative. You must close one or more of your open applications and try your DOS application again.

Remember Where You Are?

When you start a full-screen DOS session from within Windows, your screen looks just like a normal DOS screen. If you forget that you are in a Windows DOS session, it is possible to do severe damage to your Windows files (and possibly others). Running certain programs, such as disk optimizers, while in a Windows DOS session will "trash" your Windows system files. So what you need is an easy way to remind yourself that the current DOS session originated from Windows.

Here's how I do it: add the following line to your AUTOEXEC.BAT.

SET WINPMT=Windows DOS Session-Type EXIT To Return To Windows$_$P$G

This will provide a 2-line prompt in your Windows DOS session that looks like this:

Windows DOS Session-Type EXIT To Return To Windows
C:\>

If you have any questions about Windows in general or about these articles specifically, contact Denny Knapp, ISD/EUC, 444-2072.

TECHTALK

Data Protection in 1-2-3

Many worksheets contain data you don't want others to change. One way that 1-2-3 keeps data safe from accidental changes is by using data protection. You can globally protect a worksheet to prevent anyone from writing over existing data. To change some entries later, you unprotect a range, change the data, and then protect the range again. Global protection

allows you to read data in the worksheet, but not to change it accidentally.

To work with global protection, select /Worksheet Global Protection (then select either Enable or Disable to turn on/off worksheet protection). If global protection is disabled, you will be allowed to enter or edit data in any cell in the worksheet as usual.

When global protection is on, you can make changes only to cells that you explicitly unprotect with /Range Unprot. To unprotect a range in which you can enter information, select /Range Unprot (then specify the range containing the protected cells you want to unprotect and press ENTER). Since global protection is relatively easy to remove and because anyone who uses the worksheet can remove it, it is most useful in restricting data entry to specific areas of the worksheet. In this case, the worksheet will be globally protected and only the area for updates will be unprotected. To specify the unprotected cells in a fill-in-the-blank entry form, use /Range Unprot together with /Range Input.

After you unprotect a range, you may want to protect it again by selecting /Range Prot (then specify the range containing the unprotected cells you want to protect again and press ENTER). /Range Prot has no effect on a cell unless global worksheet protection is on and the cell you want to protect was previously unprotected.

Note that you cannot delete or insert columns or rows in protected worksheets, nor can you use /Range Justify.

When worksheet global protection is on, 1-2-3 displays PR in the control panel to indicate protected cells. When the cell pointer is in an unprotected cell, 1-2-3 displays U in the control panel.

/Range Unprot uses system memory, so you may want to be careful using it if you are low on memory when running 1-2-3.

If you have any questions about data protection in 1-2-3, please call Irvin Vavruska at 444-2858 or Jerry Kozak at 444-2907, both from End User Computing.

Calendar of Events

February 10 - Data Processing Managers' Group (regular meeting)

End Notes

Submit Articles

If you wish to submit an article to *News and Views* for publication, the following schedule provides dates that articles must be received by in order to be included in the corresponding issue:

March Issue 01/22/93
April Issue 02/26/93

ISD Help Desk 444-2973

Have a problem? Need ISD assistance or support for any of your information processing needs--either voice or data? The central contact point is the ISD Help Desk.

Training Information

All classes will be held in the Training Room in the basement of the Teachers Retirement Building at 1500 6th Ave., unless another location is specified. There is a limit of 12 participants per paid class and 20 participants per demonstration (free) class, unless otherwise announced. The cost of classes is shown below. Please note that these costs are subject to change each July 1st.

To enroll in a class, you must send an enrollment application to the Department of Administration, ISD, Application Services Bureau, Mitchell Building, Helena, MT 59620-0113. If you have questions about enrollment, please call 444-3987. *Once you enroll in a class, the full fee will be charged UNLESS you cancel at least three business days before the first day of class.*

The classes available and their costs are as follows:

Class Name	Cost	Length in Days
MVS\ESA - Differences from MVS\XA	FREE	¼
Introduction to TSO/SPF	$ 80.00	1
Introduction to JCL (Job Control Language)	320.00	4
*Introduction to CICS Programming	**	5
*Introduction to IDMS Database Programming	**	5
*IDMS ADS/Online	**	5
*Introduction to CULPRIT	240.00	3
*Subscripting in CULPRIT	FREE	¼
*CULPRIT Programming for IDMS	160.00	2
*Using COMPAREX	40.00	½
*Introduction to SAS: Module 1	20.00	¼
Module 2	20.00	¼
Module 3	200.00	2½
*Novell Network Administration	160.00	2
*Novell NetWare System Manager	**	3
*Novell NetWare Advanced System Manager	**	3
*Novell Netware Service & Support	**	5
*PC Memory Management Options and Considerations	FREE	¼
*Windows Purchase, Installation and Use Considerations	FREE	¼
*Windows for the Technical Support Team	**	2
Beginning Microcomputer Skills	80.00	1
Fundamentals of DOS	80.00	1
Intermediate DOS	80.00	1
*Introduction to Novell Networks	40.00	½
*Introduction to Windows	80.00	1
Introduction to WordPerfect (5.0 or 5.1)	120.00	1½
*Advanced Features of WordPerfect 5.0	120.00	1½
WordPerfect (5.0 or 5.1) Complex Document Functions	40.00	½
More WordPerfect (5.0 or 5.1) Complex Document Functions	40.00	½
WordPerfect 5.1 Tables	40.00	½
WordPerfect 5.1 Columns and Math Functions	40.00	½
WordPerfect 5.1 Graphics	80.00	1
WordPerfect Merge and Sort Functions	40.00	½
WordPerfect 5.1 Macros	80.00	1

WordPerfect 5.1 Tips and Tricks	FREE	¼
*Conversion from WordPerfect 5.0 to 5.1	FREE	¼
*Spreadsheet Design and Documentation	80.00	1
*Conversion from Lotus 1-2-3 Rel. 2.2 to Rel. 3.1	FREE	¼
Introduction to Lotus 1-2-3, (Release 2.3 or 3.1)	160.00	2
Intermediate Lotus 1-2-3, (Release 2.3 or 3.1)	80.00	1
Lotus 1-2-3 WYSIWYG Features (Release 2.3 or 3.1)	40.00	½
Lotus 1-2-3 Graphics (Release 2.3 or 3.1)	40.00	½
Lotus 1-2-3, Release 3.1, 3-Dimensional Spreadsheets	40.00	½
Lotus 1-2-3 Printing (Release 2.3 or 3.1)	40.00	½
*Freelance	80.00	1
*Lotus 1-2-3 Macros (Release 2.2, 2.3, or 3.1)	160.00	2
*Introduction to Lotus 1-2-3 Database Features	160.00	2
Introduction to PFS:Professional File, Ver. 2.0	80.00	1
Micro Database Concepts and Design	80.00	1
Introduction to R:Base, Release 3.1	200.00	2½
Advanced R:Base Release 3.1	160.00	2
*R:Base Query and Reports (Rel. 3.1)	80.00	1
*R:Base Views (Rel. 3.1)	FREE	¼
*Intermediate R:Base (Rel. 3.1)	160.00	2
*Introduction to dBASE III+	280.00	3½
*State Telephone Training	FREE	¼
Orientation to State's Computer Center	FREE	¼
Introduction to IBM's Library Reader	FREE	¼

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*   This class is not scheduled during the time covered in this issue.

Training Calendar

Data Network/Mainframe Classes

Jan. 15 a.m.	Orientation to State's Computer Center
Jan. 25	Introduction to TSO/SPF
Jan. 26, Jan. 27 a.m.	MVS\ESA - Differences from MVS\XA
Feb. 11, 16 a.m.	Introduction to IBM Library Reader
Feb. 23, 24, 25, 26	Introduction to JCL

Microcomputer Classes

Jan. 6	Introduction to PFS:Professional File, Ver. 2.0
Feb. 17	Fundamentals of DOS
Feb. 22	Intermediate DOS
Mar. 1	Beginning Microcomputer Skills

Word Processing Classes

Jan. 21 a.m.	WordPerfect 5.1 Columns & Math Functions
Jan. 21 p.m.	WordPerfect 5.1 Tables
Jan. 28, Jan. 29 a.m.	Introduction to WordPerfect (5.0 or 5.1)
Feb. 8, Feb. 9 a.m.	Introduction to WordPerfect (5.0 or 5.1)
Feb. 10	WordPerfect Macros
Feb. 18 a.m.	WordPerfect Complex Document Functions
Feb. 19 a.m.	More WordPerfect Complex Document Functions
Mar. 11	WordPerfect Graphics 5.1
Mar. 16 a.m.	WordPerfect Tips & Tricks
Mar. 29, Mar 30 a.m.	Introduction to WordPerfect (5.0 or 5.1)
Mar. 31 a.m.	WordPerfect Merge & Sort Functions

Spreadsheet Classes

Jan. 20	Intermediate Lotus 1-2-3 (Release 2.3 or 3.1)
Feb. 3 & 4	Introduction to Lotus 1-2-3 (Release 2.3 or 3.1)
Mar. 2 & 3	Introduction to Lotus 1-2-3 (Release 2.3 or 3.1)
Mar. 10 a.m.	Lotus 1-2-3 WYSIWYG Features (Release 2.3 or 3.1)
Mar. 10 p.m.	Lotus 1-2-3 Graphics (Release 2.3 or 3.1)
Mar. 17 a.m.	Lotus 1-2-3 Printing
Mar. 17 p.m.	Lotus 1-2-3 3-D Spreadsheets

Database Classes

Jan. 11	Micro Database Concepts & Design
Jan. 12-13, Jan. 14 a.m.	Introduction to R:Base, Release 3.1
Mar. 8 & 9	Advanced R:Base, Release 3.1

Data Network/Mainframe Classes

ORIENTATION TO THE STATE'S COMPUTER CENTER: presented by Irvin Vavruska of the
                                                                                            Application Services Bureau

DATE:	January 15, 1993
TIME:	9:00 am to 10:00 am, or
	10:30 am to 11:30 am
PREREQUISITE:	None
LOCATION:	Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This free class will provide an overview of the services available from the Information Services Division and will include a tour of the state's central computing facility in the Mitchell Building. Students will learn where to get help with their computing needs as well as the types of help and services available.

INTRODUCTION TO TSO/SPF: presented by Jerry Kozak of the Application Services Bureau

DATE:	January 25, 1993
TIME:	8:30 a.m. to 4:30 p.m.
PREREQUISITE:	3270nd (Interactive Class on Terminal Operation)
LOCATION:	Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

"Introduction to TSO/SPF" is a hands-on workshop about using computer terminals (or PC terminal emulators) and the SPF editor. SPF is an easy-to-learn, menu-driven system used to enter data and programs into the State's mainframe computer. Entering data, changing data and submitting programs (jobs) for execution are covered in detail. Also covered are SPF's utility functions and the tracking of job output.

This course is essential for state government personnel using terminals or PC's linked to the State's central computer. It is a prerequisite for many other ISD classes.

INTRODUCTION TO JCL (JOB CONTROL LANGUAGE):   presented by Denny Knapp of the
                                                                                                    Application Services Bureau

DATE:	February 23, 24, 25, 26, 1993
TIME:	8:30 a.m. to 4:30 p.m. each day
PREREQUISITE:	Introduction to TSO/SPF
LOCATION:	Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This course is designed for programmers, I/O controllers, operations technicians or users of report-writing software who submit jobs on the State's mainframe system.

The course will cover:

- Syntax and coding of IBM Job Control Language (JCL)
- MVS operating system
- Handling datasets and device assignments
- Some of the IBM utilities
- Troubleshooting and interpreting system messages
- Hands-on experience writing and executing JCL

INTRODUCTION TO I.B.M.'s LIBRARY READER   presented by Denny Knapp of the
Applications Service Bureau

DATE &   February 11, 1993 9:00 am to 11:00 am
TIME: February 16, 1993 9:00 am to 11:00 am

PREREQUISITE: None
LOCATION: Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This free class will provide an introduction to the I.B.M. Online Library Reader software soon to be
made available on the State personal computer network. Library Reader provides the ability to access,
on-line from your workstation, the I.B.M. mainframe hardware and software manuals. This will greatly
reduce the need for hard copy mainframe manuals. Library Reader provides several advanced capabili-
ties such as indexed or approximate searches, hypertext linking, logical grouping of manuals into
"bookshelves", user entered "margin notes", and much, much more. This session will have some hands-
on work so class sizes will be limited.

MVS\ESA - DIFFERENCES FROM MVS\XA: presented by Denny Knapp of the Application
Services Bureau

DATE &   January 26, 1993 9:00 a.m. to 11:00 a.m.
TIME: January 27, 1993 9:00 a.m. to 11:00 a.m.
                February 5, 1993 1:00 p.m. to 3:00 p.m.
PREREQUISITE: An understanding of MVS\XA, Introduction to TSO\ISPF, and Introduction
                to JCL are recommended
LOCATION: Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This free session will review the major differences between MVS\XA, the operating system formerly used
on the state mainframe computer, and MVS\ESA, the operating system recently implemented. This will
be an overview of changes as they apply to end-users and development staff. Various subjects will be
discussed, such as changes to ISPF and JCL coding.

Microcomputer Classes

BEGINNING MICROCOMPUTER SKILLS: presented by the staff of The Computer School

DATES: March 1, 1993
TIME: 8:30 a.m. to 3:30 p.m.
PREREQUISITE: None
LOCATION: Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This course will give participants brief hands-on experience with microcomputers. The following topics
will be covered:

- The Machine
- The Operating System
- Word Processing

- Spreadsheets and Graphics
- File Management
- Communications

Most class time will be spent using microcomputers and software. This course helps develop a positive
attitude toward using microcomputers and teaches their basic functions. This class--or its equivalent--is
a prerequisite for our other microcomputer courses.

FUNDAMENTALS OF DOS: presented by the staff of The Computer School

DATE:	February 17, 1993
TIME:	8:30 a.m. to 3:30 p.m.
PREREQUISITE:	Beginning Microcomputer Skills
LOCATION:	Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

"Fundamentals of DOS" is intended for microcomputer users who need to know more about controlling the microcomputer through its operating system. Programming experience is NOT required. Topics to be covered include:

- What is DOS? Why is it necessary to know about it?
- DOS names for peripherals
- File naming
- Set-up files such as CONFIG.SYS
- Internal DOS commands - DIR, ERASE, RENAME, TYPE, COPY and their variations
- External commands - FORMAT, SYS, DISKCOPY, CHKDSK, MODE
- Interpreting batch files
- Backup procedures

INTERMEDIATE DOS: presented by the staff of The Computer School

DATE:	February 22, 1993
TIME:	8:30 a.m. to 3:30 p.m.
PREREQUISITE:	Fundamentals of DOS or equivalent
LOCATION:	Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This class is designed to follow the "Fundamentals of DOS" class and to give the user a better understanding of and increased ability to use DOS. It is not designed for programmers and does not cover all the advanced features of the operating system. The following topics are covered:

- ATTRIB
- Batch File Creation
    EDLIN
    Batch file commands
- DISKCOMP
- Filters (FIND, MORE)
- JOIN
- LABEL
- MODE
- REPLACE
- SELECT
- XCOPY

INTRODUCTION TO PFS:PROFESSIONAL FILE, VERSION 2.0: presented by Irvin Vavruska of the Application Services Bureau

DATE:	January 6, 1993
TIME:	8:30 am to 4:30 pm
PREREQUISITE:	Beginning Microcomputer Skills
LOCATION:	Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

The PFS:Professional File software is an easy-to-use file management system. This course will give participants hands-on experience creating databases--demonstrating the flexibility of this software in storing, retrieving, and updating a large amount of related information.

INTRODUCTION TO WORDPERFECT: presented by the staff of The Computer School

DATE: January 28 and 29, 1993
                  February 8 and 9, 1993
                  March 29 and 30, 1993

TIME: 8:30 a.m. to 3:30 p.m. on <u>first day</u>
                  8:30 a.m. to noon on <u>second day</u>
PREREQUISITE: Beginning Microcomputer Skills or equivalent
LOCATION: Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This class is a generic introduction to WordPerfect for new users of release 5.0 or 5.1. Experience with WordPerfect is not necessary. Participants will go through the fundamentals of creating, formatting, editing and printing documents. Some advanced features will also be covered, including checking spelling, finding a word or phrase, marking blocks of text, moving text and listing/retrieving document files.

WORDPERFECT 5.1 TABLES: presented by staff of the Computer School

DATE: January 21, 1993
TIME: 1:00 p.m. to 4:30 p.m.
PREREQUISITE: Introduction to WordPerfect 5.0 or 5.1
LOCATION: Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This class will cover the creation of tables in WordPerfect 5.1. Once students practice with Word-Perfect's Tables feature they will be able to create and edit large, complex tables and provide automatically for table entries requiring calculation. Students will learn to create tables with text only or with combinations of text and numbers. Students will use math functions and create formulas to generate table entries and will define and generate column totals and row totals.

WORDPERFECT 5.1 COLUMNS AND MATH FUNCTIONS: presented by staff of the Computer
                                                School

DATE: January 21, 1993
TIME: 8:30 a.m. to noon
PREREQUISITE: Introduction to WordPerfect 5.0 or 5.1
LOCATION: Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This class will cover the column and math features in WordPerfect 5.1. Students will learn to set up and edit newspaper and parallel columns of various widths and lengths. They will practice editing text or figures in columns without losing the desired layout or visual effect. For column entries requiring calculation, subtotals and totals, students will learn to create and use column definitions, math functions, and formulas.

WORDPERFECT MERGE AND SORT FUNCTIONS: presented by staff of the Computer School

DATE: March 31, 1993
TIME: 8:30 a.m. to noon
PREREQUISITE: Introduction to WordPerfect 5.0 or 5.1
LOCATION: Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This class will cover the file merge and sort features of WordPerfect. Students currently using WordPerfect 5.0 or 5.1 will have hands-on practice with the steps needed to generate files sorted in a variety of ways. They will also learn to merge primary and secondary files for mass mailings, for example, and to set up files for keyboard merges.

WORDPERFECT COMPLEX DOCUMENT FUNCTIONS: presented by staff of the Computer School

DATE: February 18, 1993
TIME: 8:30 a.m. to noon
PREREQUISITE: Introduction to WordPerfect 5.0 or 5.1
LOCATION: Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This class will cover Master and Subdocument design as well as creation of tables of contents. Using WordPerfect's Master Document feature allows creation of larger or more complex documents while providing more manageable and editable documents. Examples are reports containing multiple chapters or requiring tables of contents, lists of figures and tables, outlines, headers and/or footers. Students currently using WordPerfect 5.0 or 5.1 will learn WordPerfect features that make it easy to generate tables of contents, lists and outlines and to combine subdocuments into a complex master document. Students will learn how to build, edit and expand a master document that includes lists of the document's contents.

MORE WORDPERFECT COMPLEX DOCUMENT FUNCTIONS—FONTS, STYLES AND LISTS:
                    presented by staff of the Computer School

DATE & TIME: February 19, 1993 8:30 a.m. to 12:00 noon
PREREQUISITE: WordPerfect (5.0 or 5.1) Complex Document Functions
LOCATION: Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This class will expand upon the concepts covered in the prerequisite class. Persons currently using WordPerfect 5.0 or 5.1 will learn WordPerfect features that they can use to create a variety of reports and other complex documents. Students will learn to incorporate lists of tables and figures, headers and footers, footnotes or endnotes, and cross-referencing into the Master and Subdocument design. The class will also cover the use of Style, Font, Text In/Out, Graphics and Compose functions for document design and layout. This class will be taught using WordPerfect 5.1, but concepts and functions covered are available in WordPerfect 5.0.

WORDPERFECT 5.1 GRAPHICS: presented by staff of the Computer School

DATE: March 11, 1993
TIME: 8:30 a.m. to 3:30 p.m.
PREREQUISITE: Introduction to WordPerfect
LOCATION: Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This class will cover the creation and use of WordPerfect 5.1 graphics. Students will learn to create and edit graphic figures, boxes and lines. Hands-on exercises will include using these boxes, figures and lines with a variety of fonts and with the compose function. The class will also cover changes in the Setup and Print functions often associated with graphics.

WORDPERFECT 5.1 TIPS AND TRICKS: presented by Kyle Wynn of Application Services
Bureau

DATE: March 16, 1993
TIME: 9:00 a.m. to 11:00 a.m.
PREREQUISITE: Introduction to WordPerfect (5.0 or 5.1); Advanced Features of
                       WordPerfect (5.0 or 5.1) is recommended
LOCATION: Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This free session demonstrates tips and a variety of tricks for using such features as edit, block, tables, columns, tabs, keyboard, merge and sort, graphics, and print. The focus is on some of the more complex desktop publishing capabilities of WordPerfect. The more familiar you are with the basic and some advanced features, the more you will gain from this demonstration. In addition to hands-on practice, there will be a hand-out with detailed instructions for each of the features and tips presented.

WORDPERFECT 5.1 MACROS   presented by staff of the Computer
School

DATE: February 10, 1993
TIME: 8:30 a.m. to 3:30 p.m.
PREREQUISITE: Introduction to WordPerfect 5.0 or 5.1
LOCATION: Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This is a seminar class that will cover the theory and construction of basic WordPerfect macros. Class will begin with simple hot key and named macros and proceed through the introductory level of the macro language. Special macros will be created such as capturing inside addresses for printing envelopes and building simple menus for lists of commonly used tasks. Students are encouraged to bring examples of tasks for instructor assisted class projects.

Spreadsheet Classes

INTRODUCTION TO LOTUS 1-2-3, RELEASE 2.3 OR 3.1:   presented by the staff of The Computer School

DATES:	February 3 & 4, 1993
	March 2 & 3, 1993
TIMES:	8:30 a.m. to 4:30 p.m. each day
PREREQUISITE:	Beginning Microcomputer Skills
LOCATION:	Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This class is a generic introduction to Lotus 1-2-3 for persons with little or no Lotus experience. It will consist of instructions and hands-on practice, with lab time available for building spreadsheets of the participants' choosing.

The class will cover design, creation, printing and editing of spreadsheets. Additional topics will include selected graphic features, the use of formulae to connect spreadsheets, and the opening of multiple files at the same time. Students will learn about new WYSIWYG (What You See Is What You Get) features of Releases 2.3 and 3.1 such as enhanced printing of spreadsheets and graphs.

LOTUS 1-2-3 WYSIWYG FEATURES: presented by the staff of The Computer School

DATES:	March 10, 1993
TIME:	8:30 a.m. to noon
PREREQUISITE:	Introduction to Lotus 1-2-3
LOCATION:	Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This course is intended for users of Release 2.3, 3.1 or 3.1+ who are already using Lotus 1-2-3 to create spreadsheets. It introduces students to the WYSIWYG (What You See Is What You Get) features of Lotus 1-2-3. The class consists of lecture and hands-on practice with the following features:

- Format--fonts, boldface, italics, underline, shadow, and outline
- Text--ranges, alignment, edit
- Screen display, zoom and customization
- Graphics within a worksheet--adding, enhancing, changing size or location
- Page layout
- Previewing and printing
- Advanced WYSIWYG features

LOTUS 1-2-3 GRAPHICS: presented by the staff of The Computer School

DATES & TIMES:	March 10, 1993
	1:00 - 4:30 PM
PREREQUISITE:	Introduction to Lotus 1-2-3
LOCATION:	Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This course is intended for users of Release 2.3, 3.1 or 3.1+ who are already using Lotus 1-2-3 to create spreadsheets. After a review of the basic Graph features, students will explore options such as automatic graph creation, group data ranges, graph windows, graph areas and Named versus Saved graphs. The class will then cover graphic display and print options. Students will learn to select colors, patterns, fonts and graph types and to save graphs and incorporate graphics into their spreadsheets.

LOTUS 1-2-3 PRINTING, RELEASE 2.3 OR 3.1 OR 3.1+:   presented by the staff of The
Computer School

DATE: March 17, 1993
TIME: 8:30 am to 12:00 noon
PREREQUISITE: Introduction to Lotus 1-2-3
LOCATION: Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This course is intended for users of Release 2.3, 3.1, or 3.1+ who are already using Lotus 1-2-3 to create spreadsheets and who want to have more control over printing. After a review of basic printing features, students will explore the Print Options menu, embedded printer control codes, printer setup strings, and creating .PRN files. The class will also cover using menu commands to print compressed, standard, or expanded characters; print compressed or standard pitch (line spacing); and print fonts and colors available on your printer. Other topics covered include automatic and manual page compression, print preview, and an introduction to WYSIWYG as it pertains to controlling page layout.

INTERMEDIATE LOTUS 1-2-3, RELEASE 2.3 OR 3.1:   presented by the staff of The Computer
School

DATE: January 20, 1993
TIME: 8:30 a.m. to 4:30 p.m.
PREREQUISITE: Introduction to Lotus 1-2-3
LOCATION: Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This course is intended for users of Release 2.3, 3.1 or 3.1+. It covers intermediate features of Lotus 1-2-3 for those who are familiar with Lotus basics. It consists of instructions and hands-on practice, with lab time available for building spreadsheets of the students' choosing.

The following topics will be presented:

- @ functions
- Date and time formats and functions
- Ranges--naming, hiding and protecting ranges; using range commands
- Global defaults
- Titles, windows and text editing

Time permitting, the following topics will be covered with some hands-on practice:

- Selected file functions and file linking
- Magellan Viewer Addin (available in Releases 2.3 and 3.1+ only)
- Auditor Addin (available in Releases 2.3 and 3.1+ only)

LOTUS 1-2-3, RELEASE 3.1, 3-DIMENSIONAL SPREADSHEETS: presented by the staff of The
Computer School

DATES & TIMES: March 17, 1993
                     1:00 pm to 4:30 pm
PREREQUISITE: Introduction to Lotus 1-2-3
LOCATION: Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This course is intended for users of Release 3.1 who are using Lotus 1-2-3 to create spreadsheets. It covers the purposes of three dimensional spreadsheets and provides hands-on practice with multiple (3-dimensional) worksheets within a file. Features covered include:

- Multiple worksheet uses
- Inserting and deleting worksheets
- Navigation among worksheets
- Working with three-dimensional ranges
- Perspective view
- Using group mode
- Working with more than one file in memory
- Navigating among files

Database Classes

MICRO DATABASE CONCEPTS AND DESIGN: presented by Denny Knapp of the Application Services Bureau

DATE:	January 11, 1993
TIME:	8:30 a.m. to 4:30 p.m.
PREREQUISITE:	Beginning Microcomputer Skills
LOCATION:	Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This class is designed to give participants a preliminary understanding of what a relational database is and how it compares to other products like Lotus 1-2-3 and PFS:Professional File. The class teaches database design techniques and is a prerequisite for other database classes offered by ISD.

INTRODUCTION TO R:BASE, RELEASE 3.1: presented by the staff of The Computer School

DATE:	January 12, 13 & 14, 1993
TIME:	8:30 a.m. to 4:30 p.m. on <u>first and second days</u>
	8:30 a.m. to noon on <u>third day</u>
PREREQUISITE:	Beginning Microcomputer Skills, Micro Database Concepts and Design and Fundamentals of DOS
LOCATION:	Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This class will give participants hands-on experience creating a database and developing a simple application with R:Base 3.1. The application will include database updates, queries, and simple form and report generation. The R:Base menu system will be used to develop the application. This class will not cover the R:Base command mode or programming other than menu system application development.

ADVANCED R:BASE, RELEASE 3.1:   presented by Denny Knapp of the Application Services Bureau

DATE:	March 8 & 9, 1993
TIME:	8:30 am to 4:30 pm
PREREQUISITE:	Introduction to R:Base
LOCATION:	Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This class will expand on topics covered in "Introduction to R:Base." Topics include sophisticated forms and reports, multi-table operations, development of systems using the "Application Express," and the development and use of customized R:Base programming.

ISD CLASS ENROLLMENT APPLICATION
COMPLETE THIS APPLICATION *IN FULL* AND
RETURN IT TO ISD'S APPLICATION SERVICES BUREAU
PRIOR TO THE FIRST DAY OF CLASS

COURSE DATA

Course Requested: _____

Date Offered: _____

STUDENT DATA

Name: _____

Soc. Sec. Number (for P/P/P): _____

Agency & Division: _____

Mailing Address: _____

_____

Phone: _____

How have you met the prerequisites for this course?
Explain, giving the class(es) taken, tutorial(s)
completed, and/or experience.

_____

_____

_____

BILLING INFORMATION/AUTHORIZATION

ISD Billing Number (5 digits): _____

Authorized Signature: _____

FULL CLASS FEE WILL BE BILLED TO THE REGISTRANT UNLESS
CANCELLATION IS MADE THREE BUSINESS DAYS BEFORE
THE START DATE OF THE CLASS.
SEND COMPLETED FORM TO:
ISD APPLICATION SERVICES BUREAU, DEPARTMENT OF ADMINISTRATION

DEPARTMENT OF ADMINISTRATION
INFORMATION SERVICES DIVISION
ROOM 21 MITCHELL BLDG
HELENA MT 59620

HAROLD CHAMBERS
MONTANA STATE LIBRARY
REFERENCE & INFO SERVICES
1515 E SIXTH
HELENA MT 59620

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